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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,394	11/04/1999	JOHN S., YATES JR.	114596-20-4009	3898

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EXAMINER	
NGUYEN BA, HOANG VU A	
ART UNIT	**PAPER NUMBER**
2122	

DATE MAILED: 12/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/434,394	YATES ET AL.	
	Examiner	Art Unit	
	Hoang-Vu A Nguyen-Ba	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59 and 61-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59 and 61-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to amendment filed August 11, 2004.

2. Claims 1-59 and 61-65 remain pending.

Information Disclosure Statement

3. Acknowledgement is made of the receipt of the information disclosure statements (IDS) submitted on August 11, 2004. The references listed therein have been considered by the Examiner.

Response to Amendments

4. Per Applicant's request, claims 1-2, 4, 6-7, 10-12, 14, 17, 22, 26-30, 32-35, 37-40, 42-46, 53, 55, 57-59, 61-65 have been amended; claim 60 has been canceled.

5. In view of Applicant's amendments to the disclosure to correct the incorrect description of various figures, the objection to the drawings is hereby withdrawn.

6. In view of Applicant's amendment to the Abstract, the objection to the Abstract is hereby withdrawn.

Response to Arguments

7. In response to Applicant's argument that the limitations "well-behaved memory devices" and "non-well-behaved memory devices" are being described at pages 37-38 of Applicant's disclosure and that the limitation "side-effects" is a well-established term in the computer arts, the rejection of claims 1, 2, 14, 22, 30, 40 and 55 under 35 U.S.C. § 112, first paragraph is hereby withdrawn.

8. In response to Applicant's argument that the term "and/or" is a well-established term that is used in claim construction, the rejection of claims 1, 17 and 55 under 35 U.S.C. § 112, second paragraph is hereby withdrawn.

9. Applicant's argument that amendments to the claims identified in paragraph 4 above should obviate the obviousness-type double-patenting is not persuasive. Therefore, the rejection of claims 1-59 and 61-65 as being unpatentable over claims 1-47 of U.S. Patent No. 6,397,379 is maintained and repeated herein for Applicant's convenience.

Further search also indicates that claims in the instant application are unpatentable over U.S. Patent No. 6,789,181 to Yates et al. for obviousness-type double patenting reasons. The rejection of potential conflicting claims is presented hereinafter.

10. Applicants' arguments with respect to the rejection of claims 1-59 and 61-65 under 35 U.S.C. § 102(e) as being anticipated by Cmelik et al. are persuasive. The rejection of these claims is hereby withdrawn.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Long*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1993); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F2.d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F2.d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminated disclaimer in compliance with 37 CFR 1.103(c) 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 1-59 and 61-65 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-47 of U.S. Patent No. 6,397,379.

Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reason(s):

The patented claims recite a method for translating and executing instructions for a computer of a first computer architecture on a computer of second different architecture, the method comprising, *inter alia*:

distinguishing memory loads that are believed to be directed to well-behaved memory from memory loads that are believed to be directed to non-well-behaved memory ('379 patent, claim 8a);

while executing the second representation, identifying side-effect resulting from memory reference having being believed at translation time to be directed to well-behaved memory device but that at execution time found to reference a device with a valid memory address that cannot be guaranteed to be well-behaved ('379 patent, 8b); and

resuming execution of the translated segment of the program in the first instruction set ('379 patent, 8c).

While the instant claims (e.g., claim 1) recite additional details such as:

a. *identifying a side-effect arising from the memory reference having been reordered by the translator*;

b. *based on the distinguishing, identifying whether the difference in sequence of side-effects may have a material effect on the execution of the program*; and

c. *circuitry designed to establish program state to a state equivalent to a state that would have occurred in the execution of the first representation;*

the additional detail described in a. appears to be an obvious variation of the limitation 8b of patented claim 8; the one described in b. appears to be an obvious variation of limitation 8b (e.g., the resulting well-behaved and non-well-behaved behaviors of memory devices are obvious variations of material effects on the execution of the program) of patented claim 8; and the one described in c. is deemed to be inherent to the step of resuming execution of the translated segment of the program in the first instruction set because in order to resume execution of the translated segment of the program in the first instruction set, program state that would have occurred in the execution of the first representation would have to be saved so that the program knows to which state to go back to resume the execution of the program in the first instruction set.

Further, the newly added limitation *based at least in part on an annotation encoded in a segment descriptor* to claims 1, 14, 22, 30 and 42 is considered not sufficiently distinct to distinguish these claims over corresponding claims 4+8 of Patent '379 because this feature is deemed not only inherent but necessary to identify device with a memory address that cannot be guaranteed to well behave according to the teachings of Patent '379.

The instant claims thus recite an obvious variation of the invention claimed in the patented claims.

The correspondence between the instant independent claims and the patented claims is as follows:

Instant claim	Patented claim
1	4+8
2+3	4+7

14+17	4+8
22	4+8
30	4+8
40	4+8
55	4+8

13. Claims 1, 14, 22, 30 and 42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2+4, 2+5, 2+6, 16+17, 16+18, 16+19, 29+30, 29+31 and 40+42 of U.S. Patent No. 6,789,394 to Yates et al.

Instant Amended Claim 1	**Patent '394 Claim 1**
a binary translator programmed to translate at least a segment of a binary representation of a program from a first representation of a first instruction set architecture to a second representation in a second instruction architecture, a sequence of side effects in the second representation differing from a sequence of side-effects in the translated segment of the first representation, the second representation distinguishing individual memory loads that are believed to be directed to non-well-behaved memory device(s); instruction execution circuitry designed, while executing the second	translating a source program into an object program, the translated object program having a different execution behavior than the source program; executing the translated object program, the execution being under a monitor capable of detecting any deviation from fully-correct interpretation before any side-effect of the different execution behavior is irreversibly committed

representation, to identify an individual memory-reference instruction, or an individual memory reference of an instruction, a side-effect arising from the memory reference having been reordered by the translator, the memory reference having been believed at translation time to be directed to well-behaved memory but that at execution found to references a device with a valid memory address that cannot be guaranteed to be well-behaved, based at least in part on an annotation encoded in a segment descriptor	
based in the distinguishing, to identify whether the difference in sequence of side effects may have a material effect on the execution of the program	and when the monitor detects the deviation, or when an interrupt occurs during execution of the object program
circuitry and/or software designed to establish program state to a state equivalent to a state that would have occurred in the execution of the first representation, and to resume execution of the translated segment of the program in the first instruction set	establishing a state of the program corresponding to a state that would have occurred during an execution of the source program, and from which execution can continue, and continuing execution of the source program primarily in a hardware emulator designed to execute instructions of an instruction set non-native to the computer

As can be seen from the table, although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter of the

invention recited in identified patent claims seems to be an obvious variation of that recited the instant claims.

Conclusion

14. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Vu "Antony" Nguyen-Ba whose telephone number is (571) 272-3701. The Examiner can normally be reached on Tuesday-Friday, 6:45 to 16:45.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANTONY NGUYEN-BA
PRIMARY EXAMINER
Art Unit 2122
December 26, 2004